WHAT IS CLAIMED IS:

1	1.	A pump system, comprising;
2	á	an implantable pump having a pumping element, the implantable
3	pump being implantabl	le into a patient for pumping a fluid in a patient, the pump having an
4	inlet which directs the	fluid to the pumping element and an outlet which delivers fluid
5	from the pumping elem	nent; and
6	8	an external driver positioned outside the patient's body, the external
7	driver having a driving	element, the driving element being drivingly coupled to the
8	pumping element to dri	ive the pumping element from a location outside the patient.
1	2.	The pump system of claim 1, wherein:
2	, t	the implantable pump has a battery which powers the pump to run
3	the pumping element.	
1	3.	The implantable pump system of claim 2, wherein:
2		the coils also produce magnetic forces which drive the impeller
3	when the coils are ener	•
3	when the cons are ener	gized by the battery.
1	4.	The pump system of claim 1, wherein:
2	· t	the implantable pump normally operates with the external driver.
1	· ·	
1		The implantable pump system of claim 1, wherein:
2	t	the driving element includes means for generating a magnetic field.
1	6.	The implantable pump system of claim 5, wherein:
2	t	the field generating means includes coils.
1	7.	The implantable pump system of claim 1, wherein:
2	t	the pumping element has magnets attached thereto, the pumping
3	element being driven b	y magnetic forces produced by the external driver.
1	8.	The implantable pump system of claim 1, wherein:
2		the pumping element includes an impeller.
_	·	me pumping element metudes air impener.
1	9.	The implantable pump system of claim 1, wherein:
2	t	the implantable pump has means for generating power to charge the

3	battery from mechanical energy of the pumping element when the external driver is	
4	driving the impeller.	
1	10.	The implantable pump system of claim 1, wherein:
2		the electrical generator means includes coils which generate
3	electrical energy.	3
1	11.	A method of operating an implantable pump, comprising the steps
2	of:	
3		providing a blood pump having a pumping element and a battery,
4	the battery providing power to drive the pumping element, the pump also having a fluid	
5	inlet and a fluid outlet, the pumping element receiving fluid from the pump inlet and	
6	delivering the fluid to the pump outlet;	
7		implanting the blood pump in a patient; and
8	•	charging the battery by driving the pumping element with an
9	external driver positioned outside the patient's body, wherein the mechanical motion of the	
10	pumping element generates power to charge the battery.	
1	12.	The method of claim 11, wherein:
2		the providing step is carried out with the pumping element having
3	magnets attached thereto, the pumping element being driven by magnetic forces produced	
4	between the magnets and the external driver, the external driver having means for	
5	generating a magnetic field.	
1	13.	The method of claim 12, wherein:
2		the providing step is carried out with the magnetic field generating
3	means including coils.	
1	14.	The method of claim 11, wherein:
2		the providing step is carried out with the pump having internal coils
3	which drive the pumping element;	
4		the charging step is carried out with the mechanical energy of the
5	pumping element bei	ng transferred into electrical energy at the internal coils, the electrical
6	energy produced at the internal coils being used to charge the battery.	

1 15. The method of claim 11, wherein:
2 the providing step is carried out with the pumping element being an
3 impeller.

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